

REMARKS

Please reconsider the application in view of the above amendments and the following remarks. Applicant thanks the Examiner for carefully considering this application.

I. Disposition of Claims

Claims 11-16 are pending in this application. Claim 11 is independent. The remaining claims depend from claim 11.

II. Rejections under 35 U.S.C § 103

Claims 11-13 and 16

Claims 11-13 and 16 were rejected under 35 U.S.C. § 103 as being obvious over U.S. Patent No. 6,146,596 (Hill) in view of U.S. Patent No. 5,360,067 (Meo, III). This rejection is respectfully traversed.

The Applicant respectfully notes that a determination under 35 U.S.C. §103 requires that the Examiner find that the claimed invention as a whole would have been obvious to a person of ordinary skill in the art at the time the invention was made. *In re Mayne*, 104 F.3d 1339, 1341, 41 U.S.P.Q. 2d 1451, 1453 (Fed. Cir. 1997). An obviousness determination must be based on underlying factual inquiries including: (1) the scope and content of the prior art; (2) the level of ordinary skill in the art; (3) the differences between the claimed invention and the prior art; and (4) objective evidence of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18, 148 U.S.P.Q. 459, 467 (1966). *See also, Robotic Vision Sys., Inc. v. View Eng'g Inc.*, 189 F.3d 1370, 1376, 51 U.S.P.Q. 2d 1948, 1953 (Fed. Cir. 1999).

In line with this standard, case law provides that "the consistent criterion for determination of obviousness is whether the prior art would have suggested to one of ordinary skill in the art that this process should be carried out and would have a reasonable likelihood of success, viewed in the light of the prior art." *In re Dow Chem.*, 837 F.2d 469, 473, 5 U.S.P.Q. 2d 1529, 1531 (Fed. Cir. 1988). The first requirement is that a showing of a suggestion, teaching, or motivation to combine the prior art references is an "essential evidentiary component of an obviousness holding." *C.R. Bard, Inc. v. M3 Sys. Inc.*, 157 F.3d 1340, 1352, 48 U.S.P.Q. 2d 1225, 1232 (Fed. Cir. 1998). This showing must be clear and particular, and broad conclusory statements about the teaching of multiple references, standing alone, are not "evidence." *In re Dembiczak*, 175 F.3d 994, 1000, 50 U.S.P.Q.2d 1614, 1617. The second requirement is that the ultimate determination of obviousness must be based on a reasonable expectation of success. *In re O'Farrell*, 853 F.2d 894, 903-904, 7 U.S.P.Q. 2d 1673, 1681 (Fed. Cir. 1988). *See also, In re Longi*, 759 F.2d 887, 897, 225 U.S.P.Q. 645, 651-52 (Fed. Cir. 1985). The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. *In re Fritch*, 972 F.2d 1260, 1265, 23 U.S.P.Q. 2d 1780, 1783-84 (Fed. Cir. 1992).

As previously submitted, the Hill *et al.* reference discloses using a blower fan to establish a vacuum below the material in the process chamber. Col. 3, lines 38-45. The soil is heated by radiant heaters from the top while the vacuum below causes the hot gases to be pulled downward. Col. 3, lines 38-45. Hydrocarbon vapors recovered from the material may then be liquefied or collected. Col. 3, lines 45-50. Thus, the flow of

heated air is from above the material to be treated downward through the material and out the bottom.

Newly cited reference Meo, III discloses the *in situ* treatment of hydrocarbons contaminating a subterranean clay formation. Col. 4, lines 26-31. As illustrated in Fig. 1, a heat injection well (a.k.a. fire well) (45) penetrates a sand formation (51) below the contaminated hydrocarbon containing clay formation (81). The fire well injects combustion gases into the lower sand formation (51). Thus, heating the overlying hydrocarbon contaminated clay formation (81) is heated by the hot combustion gases, and thus volatilizes the contaminating hydrocarbons. Col. 8, lines 21-29. The hydrocarbons volatilized by the heating of the hydrocarbon contaminated clay formation (81) are removed via a vapor extraction well (77) which penetrates a sandy formation above the hydrocarbon contaminated clay formation (81). The vapor extraction well (77) is under a vacuum is created by vacuum pump (57). The volatilized hydrocarbons and any water generated by the vapor extraction well are first passed through a knock out pot to remove the water. The volatilized hydrocarbons (if any) are then recalcuated and combusted in the fire well (77). As specifically disclosed in the Meo, III reference, the efficiencies achieved are by the recirculation and combustion of the volatilized hydrocarbons in the fire well. See Col. 9, line 9 to Col. 10. line 5., esp. Col. 9, line 65 to Col. 10, line 5.

Independent claim 11 recites a method that uses a blower to force a stream of heated air into an inlet of a process chamber. The stream of heated air passes through the material to volatize hydrocarbons. The stream of heated air containing the hydrocarbons passes through a first condenser to form liquefied hydrocarbons, which are collected.

The Examiner's proposed modification of the Hill reference with the teachings of Meo, III is improper because Hill and Meo, III are incompatible with each other, and any such modification would not be obvious to one of skill in the art. The Hill reference utilizes the downward flow of ambient gas through a heated material to remove any hydrocarbon contamination. The Meo, III reference utilizes the injection of combustion gases into a subterranean formation below the hydrocarbon contaminated formation to heat the overlying formation. The volatilized hydrocarbons are removed from a second overlying formation using a vacuum. One of skill in the art would see that the flow of gases, hydrocarbons and heat in the Hill reference are opposite to that of the Meo, III reference. Further, it should be noted that a combination of the two references would result in the use of the volatilized / recovered hydrocarbons as a portion of the heat source. Clearly this would defeat the purpose of both the Hill reference and more importantly a key limitation of the present invention which is recovering the vaporized hydrocarbons in liquid form. It is a well settled principle of patent law that if the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ1125 (Fed. Cir. 1984). See also M.P.E.P. §2143.01.

In view of the above, reconsideration and withdrawal of the rejection of independent claim 11 is requested.

Further, to the extent that claims 12-16 are dependent upon independent claim 11 under the provisions of 35 U.S.C. §112, 4th paragraph, all of the limitations of independent claim 11 are expressly and inherently recited in claims 12-16. Applicants

submit that the above arguments are equally applicable to the rejection of claims 12-16 and therefore nothing in the combination of the Hill and Meo, III references teaches or suggests the subject matter of claims 12-16.

In view of the above, Hill and Meo, III, whether considered separately or in combination, fail to show or suggest the invention recited in claim 11. Thus, claim 11 is patentable over Hill and Meo, III. Dependent claims are allowable for at least the same reasons. Accordingly, withdrawal of this rejection and allowance of the claims is respectfully requested.

Claim 14

Claim 14 was rejected under 35 U.S.C. § 103 as being obvious over Hill in view of Meo, III, and further in view of U.S. Patent No. 3,991,690 (Bork). This rejection is respectfully traversed.

As discussed above, Hill and Meo, III, whether considered separately or in combination, fail to show or suggest the invention recited in claim 11. Bork fails to provide that which Hill and Meo, III lack with respect to the claimed invention. The Applicant notes that the Examiner has only relied on Bork to show the use of a series of condensers and blowers to improve the level of condensation achieved. Bork neither shows nor suggests using a blower to force a stream of heated air into a process chamber as recited in claim 11. Further, Bork fails to make the combination of Hill and Meo, III obvious to one of ordinary skill in the art.

In view of the above, Hill, Meo, III, and Bork, whether considered separately or in combination, fail to show or suggest the invention recited in claim 11. Thus, claim 14, which depends from claim 11, is patentable over Hill, Meo, III, and Bork for at least the

same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

Claim 15

Claim 15 was rejected under 35 U.S.C. § 103 as being obvious over Hill in view of Meo, III, and further in view of U.S. Patent No. 4,974,528 (Barcell). This rejection is respectfully traversed.

As discussed above, Hill and Meo, III, whether considered separately or in combination, fail to show or suggest the invention recited in claim 11. Barcell fails to provide that which Hill and Meo, III lack with respect to the claimed invention. The Applicant notes that the Examiner has only relied on Barcell to show the step of thermally oxidizing any non-condensable gases prior to re-circulating the stream of air. Barcell neither shows nor suggests using a blower to force a stream of heated air into a process chamber as recited in claim 11. Further, Barcell fails to make the combination of Hill and Meo, III obvious to one of ordinary skill in the art.

In view of the above, Hill, Meo, III, and Barcell, whether considered separately or in combination, fail to show or suggest the invention recited in claim 11. Thus, claim 15, which depends from claim 11, is patentable over Hill, Meo, III, and Barcell for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

III. Conclusion

Applicant believes this reply is fully responsive to all outstanding issues and places this application in condition for allowance. If this belief is incorrect, or other issues arise, the Examiner is encouraged to contact the undersigned or his associates at the telephone number listed below. Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 05542/019002).

Respectfully submitted,

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